

WHAT IS CLAIMED IS:

1. A laser treatment apparatus for irradiating an affected part of a patient's eye with a treatment laser beam to treat the affected part, including:

5 treatment beam irradiation means including a first irradiation optical system for irradiating the treatment beam;

aiming beam irradiation means including a second irradiation optical system for irradiating an aiming beam, the second irradiation optical system being optically adjusted such that sighting of the treatment beam is completed when the aiming beam forms a predetermined shape on a reflection plane;

image pickup means including an image pickup optical system for imaging an area including the affected part of the patient's eye;

15 sighting detection means for processing an image of the aiming beam picked-up by the image pickup means to detect a sighting state;

movement detection means for detecting movement in an optical axis direction of at least one of at least a part of the image pickup optical system and at least a part of the irradiation optical system; and

20 determination means for determining a direction in which at least one of at least the part of the image pickup optical system and at least the part of the irradiation optical system is to be moved based on results detected by the sighting detection means and the movement detection means respectively.

25 2. The laser treatment apparatus according to claim 1 further including observation means including a display for displaying

an image picked up by the image pickup means on the display.

3. The laser treatment apparatus according to claim 2 further including display control means for causing the display to display that the sighting state is proper based on the result detected by the sighting detection means.

4. The laser treatment apparatus according to claim 2 further including display control means for causing the display to display the direction in which at least one of at least the parts of the image pickup optical system and the irradiation optical system are to be moved based on the result detected by the determination means.

5. The laser treatment apparatus according to claim 2, wherein the display is place-changeably mounted on the apparatus.

6. The laser treatment apparatus according to claim 1 further including movement means for automatically moving at least one of at least the part of the image pickup optical system and at least the part of the irradiation optical system based on the result detected by the determination means.

7. The laser treatment apparatus according to claim 1, further including:

movement means for automatically moving at least one of at least the part of the image pickup optical system and at least the part of the irradiation optical system; and

movement control means for controlling the movement means to move at least one of at least the part of the image pickup optical system and at least the part of the irradiation optical system by a predetermined amount in a predetermined direction based on an instruction to start automatic sighting.

8. The laser treatment apparatus according to claim 1,
wherein the aiming beam irradiation means irradiates a plurality
of aiming beams which are symmetrical about an optical axis to
coincide with each other at a focus point of the treatment laser
beam, and the sighting detection means detects the sighting state
based on an overlapping condition of the images of the plurality
of aiming beams.

9. The laser treatment apparatus according to claim 1,
wherein the aiming beam irradiation means irradiates the aiming
beam to focus on a focus point of the treatment laser beam, and
the sighting detection means detects the sighting state based on
a spot diameter of the image of the aiming beam.

10. The laser treatment apparatus according to claim 1,
wherein the treatment beam irradiation means includes a laser
source which emits a YAG laser beam as the treatment laser beam.